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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/445,289	MUKAMOLOVA ET AL.	
	Examiner	Art Unit	
	S. DEVI, Ph.D	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *126-128,131,144,149,150,157 and 159-172* is/are pending in the application.

5a) Of the above claim(s) *165, 166 and 168-172* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *126-128, 131, 144, 149, 150, 157, 159-164 and 167* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☒ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/10/11*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

RESPONSE TO APPLICANTS' AMENDMENT

Applicants' Amendments

1) Acknowledgment is made of Applicants' amendments filed 11/08/11, 03/10/11, 04/26/11 and 06/14/11 in response to the non-final Office Action mailed 11/10/10.

Election

2) Acknowledgment is made of Applicants' election filed 11/08/11 in response to the species election requirement mailed 09/08/11 which was set forth for the newly added claims 165-172. After the species election requirement was mailed out, Applicants have deleted the SEQ ID NO: 2 species from claim 167, replaced it with the new species SEQ ID NO: 1, and elected this SEQ ID NO: 1 species with traverse. Applicants' traversal is on the grounds that the polypeptide species identified do share significant common structure as required by the genus claims, i.e., at least 50% identity with amino acid residues 117 to 184 of SEQ ID NO: 2. Applicants cite MPEP 808.01(a) and state that the Office has not discussed the disclosed relationship between the claimed polypeptide species and has not advanced reasons leading to the conclusion that the disclosed relation does not prevent restriction. With this, Applicants submit that the present *restriction requirement* is improper. Applicants further assert that an election among only nine polypeptide species is improper because the MPEP 803.04 allegedly states that normally ten sequences constitute a reasonable number for examination purposes. Applicants contend that the sequences of the species in the present case show structural similarity and reduce the examination burden compared with a situation where the sequences are independent and distinct and place a lesser burden than contemplated by MPEP 803.04. Applicants further state that the

claimed genus has already been searched and therefore, there is no search burden.

Applicants' arguments have been carefully considered, but are not persuasive. First, with regard to Applicants' remarks on the ten sequences constituting a reasonable number of independent and distinct sequences for examination purposes, it should be noted that what was set forth in the Office Action mailed 09/08/11 was not a restriction requirement, instead a species election requirement on the newly submitted claims reciting polypeptide species previously not presented in the previous claims. Second, the recited multiple polypeptide variant species not only have as much as up to 50% non-identity within the 117-184 amino acid residues of SEQ ID NO: 2, but can have varied amino acid residues of non-SEQ ID NO: 2-origin on one or both sides outside of the region spanning amino acids 117-184 of SEQ ID NO: 2, thus encompassing innumerable variant species. Clearly, the identified polypeptide species do not share significant common structure or amino acid composition. Each polypeptide species requires a separate search query and a separate sequence search followed by review of the sequence alignment reports. One search for the huge genus does not necessarily identify relevant art on all the encompassed variant species within the huge genus. Accordingly, the species election requirement as set forth is maintained.

Status of Claims

3) Claims 126, 128, 144 and 160-164 have been amended via the amendment filed 06/14/11.

New claims 165-172 have been added via the amendment filed 06/14/11.

Claim 167 has been amended via the amendment filed 11/08/11. Via this amendment, an additional polypeptide species, SEQ ID NO: 1, has been added.

Claims 165, 166 and 168-172 have been withdrawn from consideration as being directed to a non-elected species. See 37 C.F.R 1.142(b) and M.P.E.P § 821.03.

Claims 126-128, 131, 144, 149, 150, 157 and 159-172 are pending.

Claims 126-128, 131, 144, 149, 150, 157, 159-164 and 167 are under examination.

Prior Citation of Title 35 Sections

4) The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office Action References.

Prior Citation of References

5) The references cited or used as prior art in support of one or more rejections in the instant Office Action and not included on an attached form PTO-892 or form PTO-1449 have been previously cited and made of record.

Objection(s) Withdrawn

6) The objection to the specification made in paragraph made in paragraph 11 of the Office Action mailed 01/05/10 and maintained in paragraph 8 of the Office Action mailed 11/10/10 with regard to claim 128, is withdrawn in light of Applicants' amendment to the claim. A new objection is set forth below to address the amended claim 128.

Objection(s) to Specification

7) 37 CFR 1.75(d)(1) provides, in part, that 'the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.'

The instant specification is objected to for the following reasons:

Claim 128, as amended, includes the limitations: 'said dormant, moribund or latent high G+C Gram positive bacterial cells are present in a sample' and the method 'identifies the presence of dormant, moribund or latent high G+C Gram positive bacterial cells in the sample by detecting growth of high G+C Gram positive bacterial cells in the sample'. The 'high G+C Gram positive bacterial cells' recited in the last two lines of the claim whose growth in the sample is 'detected' are not required to be dormant, moribund or latent high G+C Gram positive bacterial cells. Claim 162, as amended, includes similar limitations. However, these limitations and the currently claimed method lack sufficient antecedence in the as-filed specification. See also paragraph 19 below.

Note that while base claims 160 and 161 make no mention of 'a sample', the dependent claim 162 does, and the sample recited in claim 128 encompasses a sample taken from a human or animal as recited in the amended dependent claim 159. Claims 128 and 162 depend from the amended claims 126 and 160 or 161 respectively, which is now drawn to a method of stimulating growth of high G+C Gram positive bacterial cells or resuscitating dormant, moribund or latent high G+C Gram positive bacterial cells requiring the steps of contacting high G+C Gram positive bacterial cells (i.e., inclusive of non-dormant, non-moribund or non-latent high G+C Gram positive bacterial cells), or dormant, moribund or latent G+C Gram positive bacterial cells *in vitro* with an isolated or purified polypeptide having at least 50% sequence identity with amino acid residues 117 to 184 of SEQ ID NO: 2, wherein said polypeptide is capable of stimulating growth of high G+C Gram positive bacterial cells or resuscitating dormant, moribund or latent high G+C Gram positive bacterial cells, and incubating said high G+C Gram positive bacterial cells, or said dormant, moribund or latent high G+C Gram positive

bacterial cells in culture medium containing the polypeptide, thereby stimulating the growth of said cells or resuscitating dormant, moribund or latent high G+C Gram positive bacterial cells. It appears that the claimed method is not selective in stimulating the growth of moribund, dormant or latent high G+C Gram positive bacterial cells, but it non-selectively stimulates the growth of both high G+C Gram positive bacterial cells as well as dormant, moribund or latent high G+C Gram positive bacterial cells. Yet, the *method of stimulating* high G+C Gram positive bacterial cells, or resuscitating dormant, moribund or latent high G+C Gram positive bacterial cells *in vitro* comprising contacting the high G+C Gram positive bacterial cells, or the dormant, moribund or latent high G+C Gram positive bacterial cells in a sample *in vitro* and incubating the cells in culture medium containing the recited polypeptide is required to serve as a *method of identifying* the presence specifically of 'dormant, moribund or latent high G+C Gram positive bacterial cells in the sample' by detecting growth of high G+C Gram positive bacterial cells in the sample, **not** by detecting growth of the dormant, moribund or latent high G+C Gram positive bacterial cells in the sample. Note that while base claims 160 and 161 make no mention of 'a sample', the dependent claim 162 does, and the sample recited in claim 128 encompasses a sample taken from a human or animal as recited in the amended dependent claim 159.

Applicants state that support for the amendment is found in the specification. Applicants point to line 22 of page 2 to line 14 of page 3 and assert that this part of the specification explains that bacteria, including pathogenic mycobacteria such as *Mycobacterium tuberculosis* can enter a latent or dormant state that complicates the detection, cultivation and enumeration of bacteria, for example, in the food and health care industries. However, this statement in the specification is limited to the capacity of *Mycobacterium tuberculosis* to enter a latent or dormant state and it

does not and cannot provide support for the now claimed method of stimulating dormant, moribund or latent high G+C Gram positive bacterial cells via contacting dormant, moribund or latent high G+C Gram positive bacterial cells *in vitro* in a sample with an isolated or purified polypeptide having at least 50% sequence non-identity with amino acid residues 117 to 184 of SEQ ID NO: 2, wherein said polypeptide is capable of stimulating growth of dormant, moribund or latent high G+C Gram positive bacterial cells, and incubating said dormant, moribund or latent high G+C Gram positive bacterial cells in culture medium containing the polypeptide, wherein the method of stimulating the growth of dormant, moribund or latent high G+C Gram positive bacterial cells ends up serving as a method of identifying the presence of dormant, moribund or latent high G+C Gram positive bacterial cells in the sample by *detecting* growth the of **not** dormant, moribund or latent high G+C Gram positive bacterial cells, but high G+C Gram positive bacterial cells in the sample.

Applicants point to lines 5-7 of page 4 of the specification and state that the specification defines RP factors as encompassing substances capable of resuscitating dormant, moribund or latent cells (e.g., bacterial cells). Again, the definition of the RP factors does not provide antecedent basis for the now claimed method of growth stimulation of moribund and non-moribund high G+C Gram positive bacterial cells in a sample that serves as a method of identifying the presence of moribund high G+C Gram positive bacterial cells in the sample by detecting growth of generic high G+C Gram positive bacterial cells in the sample as claimed.

Applicants further point to lines 24-28 of page 2 of the specification which states that resuscitation permits 'non-culturable' dormant, moribund or latent cells to become culturable. With this, Applicants conclude the following: '… the specification explains that one of skill in the art can identify the presence of

dormant, moribund or latent bacterial cells by demonstrating renewed culturability, (i.e., by detecting growth following incubation in culture medium) of such dormant, moribund or latent cells following contact of a sample containing such cells with a RP factor. However, the specification, as originally filed, does not equate demonstrating renewed culturability of dormant, moribund or latent bacterial cells to a method of identifying dormant, moribund or latent high G+C Gram-positive bacterial cells in a sample via 'detecting growth of high G+C Gram-positive bacterial cells in the sample'.

Applicants point to lines 25 and 26 of page 18 and lines 15-19 of page 31 of the specification and state that the term sample includes samples taken from various sources including a human or animal as well as soil, food, marine, freshwater, or tissue samples, and product samples such as food stuff, pharmaceutical preparation, or medical product. However, the samples recited at lines 25-26 of page 18 of the specification are associated with recovery of culturable microorganisms, but not with identification of the presence of dormant, moribund or latent high G+C Gram positive bacterial cells in a sample by detecting growth of generic high G+C Gram positive bacterial cells that are not required to be dormant, moribund or latent. The specification at lines 15-19 of page 31 of the specification describe contemplation by the invention of a method for determining the microbiological quality of a product such as a foodstuff, pharmaceutical preparation or medical product comprising the step of contacting a sample of the product with an RP factor, wherein the RP factor preferably forms part of a nutrient composition. This part of the specification does not provide antecedent basis for the now claimed method of growth stimulation of moribund and non-moribund high G+C Gram positive bacterial cells in a sample that serves a s a method of identifying the presence of moribund high G+C Gram positive bacterial

cells in the sample via detecting growth of high G+C Gram positive bacterial cells in the sample as claimed.

The now claimed methods lack sufficient antecedent basis in the as-filed specification.

Rejection(s) Withdrawn

8) The rejection of claim 128 made in paragraph 29(a) of the Office Action mailed 01/05/10 and maintained in paragraph 16 of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

9) The rejection of claim 159 made in paragraph 29(c) of the Office Action mailed 01/05/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the base claim.

10) The rejection of claims 126-128, 131, 144, 149, 150, 157 and 159 made in paragraph 27 of the Office Action mailed 01/05/10 and maintained in paragraph 18 of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, first paragraph, as containing inadequate written description, is withdrawn in light of Applicants' amendment to the claims and/or the base claim(s). In the second full paragraph of page 15 of their amendment filed 06/14/11 (under Remarks), Applicants state the following:

> Moreover, the Examiner acknowledges that Applicants have identified conserved cultural features of RP factors that are likely to be functionally important, stating that "Applicants' specification clearly provides guidance relating to those regions of the protein where sequence variations are likely to be tolerated and those conserved regions where variations in the sequence are less desirable".

However, it must be noted that this is **not** the Office's acknowledgment as stated incorrectly on page 15 of Applicants' amendment filed 06/14/11. Instead,

the above-cited sentence was one of Applicants' previous arguments that was noted by the Office along with Applicants' other arguments.

11) The rejection of claims 128, 144, 159 and 162-164 made in paragraph 20 of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, first paragraph, as containing new matter, is withdrawn in light of Applicants' amendment to the claims and/or the base claim.

12) The rejection of claim 128 made in paragraph 22(a) of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

13) The rejection of claim 144 made in paragraph 22(b) of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

14) The rejection of claim 162 made in paragraph 22(c) of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

15) The rejection of claim 162 made in paragraph 22(d) of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

16) The rejection of claim 128 made in paragraph 22(e) of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

17) The rejection of claim 159 made in paragraph 22(f) of the Office Action mailed 11/10/10 under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the base claim.

New Rejection(s) Necessitated by Applicants' Amendment

Rejection(s) under 35 U.S.C § 112, First Paragraph (New Matter)

18) The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

19) Claims 128 and 159-162 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Claim 128, as amended, includes the new limitations: ... method of claim 126 ...., wherein said 'dormant, moribund or latent high G+C Gram-positive bacterial cells are' present in a sample, and the method 'identifies the presence of dormant, moribund or latent high G+C Gram-positive bacterial cells in the sample by detecting growth of high G+C Gram-positive bacterial cells in the sample'. The 'high G+C Gram-positive bacterial cells in the sample' the growth of which is 'detected' (see last two lines) are not required to be dormant, moribund or latent high G+C Gram-positive bacterial cells the presence of which is 'identified' (see lines 2 and 3). Claim 128 depends from the amended claim 126, which requires step (i) of contacting the dormant, moribund or latent *Mycobacterium tuberculosis* bacterial cells with an isolated polypeptide as recited and step (ii) of incubating the cells in culture medium containing the polypeptide, thereby stimulating growth of said high G+C Gram-positive bacterial cells or resuscitating said high G+C Gram-positive bacterial cells. Thus, the *method of stimulating growth of* high G+C Gram-

positive bacterial cells *or the method of resuscitating* dormant, moribund or latent high G+C Gram-positive bacterial cells comprising contacting the cells present in a sample *in vitro* and incubating the cells in culture medium containing the recited polypeptide is required to serve also as a *method of identifying* specifically the presence of 'dormant, moribund or latent high G+C Gram-positive bacterial cells in the sample by detecting growth of high G+C Gram-positive bacterial cells in the sample' in the amended claim 128. In sum, the identification of 'dormant, moribund or latent high G+C Gram-positive bacterial cells in the sample' is required to 'detect' the growth of generic high G+C Gram-positive bacterial cells in the sample, which cells encompass non-dormant, non-moribund or non-latent high G+C Gram-positive bacterial cells in the sample. Note that the sample recited in the amended claim 128 encompasses a sample taken from a human or animal as recited in the dependent claim 159. Claim 162, as amended, has recitations and issues similar to the ones identified above in the amended claim 128. Applicants do not point to specific parts of the as-filed specification that provides support for the amended claims 128 and 162. Lines 24-28 of page 2 of the specification, which are reproduced below, are said to state that resuscitation permits 'non-culturable' dormant, moribund, or latent cells to become culturable.

> However, it is also widely recognised that, especially in nature, the distinction between life and non-life is not absolute; many cells may exist in "dormant" or "moribund" forms or states and will not produce colonies on nutrient media (i.e. are "non-culturable"). However, these dormant or latent cells are not dead: they can be returned, by a process known as resuscitation, to a state of viability/culturability.

With this, Applicants conclude the following (see top of page 11 of Applicants' amendment filed 06/14/11):

> Thus, the specification explains that one of skill in the art can identify the presence of dormant, moribund or latent bacterial cells by demonstrating renewed culturability (i.e., by detecting growth following incubation in culture medium) of such dormant, moribund or latent cells following contact of a sample containing such cells with an RP factor'.

However, the above-cited lines 24-28 of page 2 of the specification do not provide descriptive support for the now claimed method of claim 128 or 162, i.e., the *method of stimulating growth of* high G+C Gram-positive bacterial cells *or the method of resuscitating* dormant, moribund or latent high G+C Gram-positive bacterial cells comprising contacting the cells present in a sample *in vitro* and incubating the cells in culture medium containing the recited polypeptide serving also as a *method of identifying* specifically the presence of 'dormant, moribund or latent high G+C Gram-positive bacterial cells in the sample by detecting growth of high G+C Gram-positive bacterial cells in the sample'. Nowhere does the specification, as originally filed, equate demonstrating renewed culturability of dormant, moribund or latent bacterial cells to a method of identifying dormant, moribund or latent high G+C Gram-positive bacterial cells in a sample via 'detecting growth of high G+C Gram-positive bacterial cells in the sample'. See also paragraph 7 *supra*. Therefore, the identified limitation(s) in the claim(s) and the currently claimed scope of the claims constitute new matter. See M.P.E.P 608.04 to 608.04(c).

Applicants are invited to point to the descriptive support in specific pages and lines of the disclosure, as originally filed, for the limitation identified above, or alternatively, remove the new matter from the claim(s). Applicants should specifically point out the support for any amendments made to the disclosure. See MPEP 714.02 and 2163.06.

Rejection(s) under 35 U.S.C § 112, Second Paragraph

20) The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicant regards as his/her invention.

21) Claims 126-128, 131, 144, 149, 150, 157, 159-164 and 167 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

(a) Claim 126, as amended, is indefinite because it lacks sufficient antecedence in the limitations: 'high G+C Gram-positive bacterial cells' or 'dormant, moribund or latent high G+C Gram-positive bacterial cells' (see lines 4, 5, 8 and 9) and 'growth' (see line 13). Since the earlier part of the claim already includes these limitations, for proper antecedence, it is suggested that Applicants replace the above-identified limitations with the limitations --the high G+C Gram-positive bacterial cells--, --the dormant, moribund or latent high G+C Gram-positive bacterial cells--, and --the growth--.

(b) Analogous rejection and criticism apply to claims 144, 160, 161, 163 and 164, as amended.

(c) Claim 128, as amended, is indefinite, internally inconsistent, confusing and/or lacks sufficient antecedence in the limitation: detecting growth of 'high G+C Gram-positive bacterial cells in the sample'. See last two lines. Claim 128 depends from claim 126, which as amended, is drawn to a method of 'stimulating growth' of 'high G+C Gram-positive bacterial cells' or of 'resuscitating dormant, moribund or latent high G+C Gram-positive bacterial cells'. The generic term, 'high G+C Gram-positive bacterial cells', encompasses non-dormant, non-moribund and non-latent high G+C Gram-positive bacterial cells. The method of claim 128 as amended, however, ends up 'detecting growth' of generic 'high G+C Gram-positive bacterial cells' after identifying the presence of 'dormant, moribund or latent high G+C Gram-positive bacterial cells'. It is

unclear how a method of stimulating growth of dormant, moribund or latent high G+C Gram-positive bacterial cells via steps (i) and (ii) of claim 126 results in identifying 'dormant, moribund or latent high G+C Gram-positive bacterial cells' and yet detecting growth of 'high G+C Gram-positive bacterial cells' which encompass non-dormant, non-moribund and non-latent high G+C Gram-positive bacterial cells. The metes and bounds of the claim is indeterminate.

(d) Analogous rejection and criticism apply to claim 162, as amended.

(e) Claim 128, as amended, is indefinite and confusing in the method wherein 'the method identifies the presence of dormant, moribund or latent high G+C Gram-positive bacterial cells in the sample by detecting growth of high G+C Gram-positive bacterial cells in the sample'. Claim 128 depends from claim 126 or 127, which includes contacting high G+C Gram-positive bacterial cells, or dormant, moribund or latent high G+C Gram-positive bacterial cells *in vitro* with an isolated polypeptide having at least 50% sequence identity with amino acid residues 117 to 184 of SEQ ID NO: 2 that is capable of stimulating growth of or resuscitating said cells and incubating the cells in culture medium containing the polypeptide. It is unclear how a *method of stimulating* growth of dormant, moribund or latent high G+C Gram-positive bacterial cells, or of resuscitating dormant, moribund or latent high G+C Gram-positive bacterial cells comprising the *in vitro* contacting step of 126(i) and the incubating step of 126(ii) ends up *identifying* the presence of dormant, moribund or latent high G+C Gram-positive bacterial cells in the sample by specifically *detecting* growth of high G+C Gram-positive bacterial cells in the sample. For example, if a sample comprises a mixture of dormant, moribund or latent *Mycobacterium tuberculosis* bacterial cells and non-dormant, non-moribund or non-latent *Mycobacterium tuberculosis* bacterial cells, would the mere carrying out of steps 126(i) and 126(ii) of the

method of 'stimulating growth' of claim 126 identify dormant, moribund or latent *Mycobacterium tuberculosis* bacterial cells and/or non-dormant, non-moribund or non-latent *Mycobacterium tuberculosis* bacterial cells in the sample by selectively detecting growth of dormant, moribund or latent *Mycobacterium tuberculosis* bacterial cells over non-dormant, non-moribund or non-latent *Mycobacterium tuberculosis* bacterial cells? If the method stimulates the growth of both dormant, moribund or latent *Mycobacterium tuberculosis* bacterial cells as well as non-dormant, non-moribund or non-latent *Mycobacterium tuberculosis* bacterial cells in a sample, how does the method of stimulating growth identify the former cells over the latter cells by detecting one over the other? Clarification/correction is requested.

(f) Analogous rejection and criticism apply to claim 162, as amended.

(g) Claims 127, 128, 131, 149, 150, 157, 159 and 167, which depend directly or indirectly from claim 126, and claim 162, which depends from claim 160 or 161, are also rejected as being indefinite because of the indefiniteness identified above in the base claim.

Rejection(s) under 35 U.S.C. § 102

22) The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office Action:

> A person shall be entitled to a patent unless –
> **(b)** the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

23) Claims 126, 127, 131 and 144 are rejected under 35 U.S.C. § 102(b) as being anticipated by of Mukamolova *et al*. (*Antonie van Leeuwenhoek* 67: 289-295, 1995, of record) (Mukamolova *et al*., 1995) as evidenced by Mukamolova *et al*.

(*PNAS* 95: 8916-8921, July 1998, of record) (Mukamolova *et al*., 1998).

Mukamolova *et al*. (1995) taught a method of resuscitation of starved or dormant cells present in stationary culture samples of *Micrococcus luteus*, a high G+C Gram positive bacterium, by contacting the dormant cells with a sterile-filtered supernatant isolated from the late log phase of viable cultures of the same high G+C Gram positive *Micrococcus luteus,* which supernatant contains an antibacterial factor secreted or expressed by the *Micrococcus luteus* cells, or by contacting with the resuscitating cell strain of *Micrococcus luteus* secreting or expressing an antibacterial factor, and incubating. The strain of viable and dormant *Micrococcus luteus* used by Mukamolova *et al*. (1995) was the 'Fleming strain 2665' or NCIMB 13267 strain. See title; abstract; Materials and methods; Results; and Figure 2. The prior art 'Fleming strain 2665' of *Micrococcus luteus* is the very same strain used in the instant invention by Applicants (see last paragraph on page 44 of the instant application), and therefore, the prior art strain is expected to necessarily comprise a nucleic acid that encodes the recited polypeptide. Because the 'Fleming strain 2665' strain of *Micrococcus luteus* is the very same strain used in the instant invention by Applicants, the cells of this strain in its culture are expected to necessarily secrete or express an at least 50% identical polypeptide of the instantly recited polypeptide comprising amino acid residues 117 to 184 of SEQ ID NO: 2 and the sterile-filtered supernatant isolated from its culture is expected to necessarily comprise cell-free, isolated polypeptide at least 50% identical to the instantly recited polypeptide comprising amino acid residues 117 to 184 of SEQ ID NO: 2. That the prior art culture supernatant necessarily comprises an isolated polypeptide at least 50% identical to the instantly recited polypeptide comprising amino acid residues 117 to 184 of SEQ ID NO: 2 in a unit dosage form is inherent from the teachings of Mukamolova *et al*. (1995) in light of

what is known in the art. For instance, Mukamolova *et al*. (1998) teach that the culture supernatant of the viable cells of the 'Fleming strain 2665' of *Micrococcus luteus* contains or secretes a proteinaceous resuscitation promoting factor that comprises a polypeptide at least 50% identical to the instantly recited amino acid residues 117 to 184 of SEQ ID NO: 2 and promotes the resuscitation and growth of dormant cells of the homologous organism in picogram quantities. See abstract; Materials and Methods; Results; and Figures 2 and 3 of Mukamolova *et al*. (1998). The prior art method meets the recited steps (i) and (ii) of the instant claims and therefore necessarily identifies the presence of high G+C Gram positive *Micrococcus luteus* cells by detecting their growth. The limitation 'recombinant' in claim 127 represents a process limitation. A product does not have to be made by the same process in order to be the same product. In the instant case, Applicants have not shown the underlying structure of the prior art polypeptide differs from that of the instantly recited polypeptide.

Claims 126, 127, 131 and 144 are anticipated by of Mukamolova *et al*. (1995). The reference of Mukamolova *et al*. (1998) is **not** used as a secondary reference in combination with Mukamolova *et al*. (1995), but rather is used to show that every element of the claimed subject matter is disclosed by Mukamolova *et al*. (1995) with the unrecited characteristics being inherent therein. See *In re Samour* 197 USPQ 1 (CCPA 1978).

Claim Objection(s)

24) Claims 160, 161 and 163 are objected to for the following reasons:

(a) Claim 160 is objected to for the unnecessary and/or confusing notation '-' before the limitation 'wherein' in line 6 of the claim.

(b) Analogous objection applies to claims 161 and 163 with regard to the similar notation '-' at the end of line 6 in between the limitations 'NO:' and '2' of claim 161 and in line 6 of claim 163.

Remarks

25) Claims 126-128, 131, 144, 149, 150, 157, 159-164 and 167 stand rejected.

26) Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 C.F.R 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 C.F.R 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

27) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Central Fax number, (571) 273-8300, which receives transmissions 24 hours a day and 7 days a week.

28) Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public

PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.Mov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (in USA or CANADA) or 571-272-1000.

29) Any inquiry concerning this communication or earlier communications from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (571) 272-0854. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 7.15 a.m. to 4.15 p.m. except one day each bi-week, which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor Gary Nickol, can be reached on (571) 272-0835.

/S. Devi/
Primary Examiner
AU 1645

January, 2012